REMARKS

Claims 1-14 are pending in this application.

Claims 9-11 and 14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2003/0096608 to Mortensen et al. (hereinafter Mortensen). Claims 1-8 and 12-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mortensen in view of U.S. Patent No. 6,771,624 to Lu (hereinafter Lu).

Claims 1, 2, 5, 6, 8, 9, 12 and 13 have been amended to clarify the term RRM procedures by replacing the term "procedures" with the term "algorithm". Although the terms "procedures" and "algorithms" can be used interchangeably in relation to the invention, use of the term "algorithm" more particularly points out and distinctly claims the invention. In this way, the claims more specifically reflect the method of coordinating RRM algorithms disclosed.

Claims 1 and 9 have also been amended to clarify the condition of the radio link while the RRM algorithm is being executed. Additionally, claim 1 has been amended to clarify the analysis of the RRM algorithms. The previously submitted amendment to claim 9 has been deleted; therefore the new matter rejection to the claim amendment is now moot.

The central purpose of Mortensen is to provide a method for handling a congestion situation in a digital mobile communication network (paragraph 0013).

The central purpose of the present invention is to coordinate different radio resource management (RRM) algorithms that are acting on the same radio link (RL). This coordination prevents two or more algorithms from acting on the same RL at the same time (application paragraph 0105).

The present invention provides a specific solution to the problem of multiple RRM algorithms acting on the same RL at the same time. Unlike Mortensen, the present invention is not concerned with the general traffic flow through the mobile communication networks and is not attempting to regulate traffic flow. The methods of claims 1 and 9 are specific to scheduling RRM algorithms. When no RRM algorithms are performing on a RL, the RL is in an idle state. When a RRM algorithm commences performance on a RL, the RL is transitioned into a busy state and no other RRM algorithms can act on that RL. Once the RRM algorithm is finished performing on the RL, the RL is returned to the idle state where, if necessary, it can be acted upon by another RRM algorithm (paragraphs 0102, 0103). This occurs without regard to general congestion or parameter sets.

Mortensen discloses a method where upon the detection of a congestion situation, the RNC switches parameter sets in order to control the congestion (paragraph 0031). The embodiment disclosed in paragraph 0037 is indicative of the method Mortensen employs to manage the load on the network. The mobile phone is provided with a standard parameter set and one or more alternate parameter

sets. The mobile phone is then able to "switch into an alternative mode of operation when a congestion situation occurs to make more efficient use of the available channel capacity" (paragraph 0037). The Examiner suggests that the meaning of the "alternative mode" is an "idle (sleep inactive) or busy" mode (Page 3, line 11 of the second Office Action); Applicants respectfully disagree with this interpretation.

Mortensen's use of the phrase "alternate mode" means to switch the mobile phone to using an alternative parameter set (paragraphs 0036-0037). This is not the same as the present invention's use of the terms "idle" and "busy". In the context of the present invention, the term "idle" does not mean sleep; it refers to a state where the RL is not being acted upon by a RRM algorithm. A RL is still active in all other respects while in an idle state. Claim 9 has been amended to more clearly point out and distinctly claim the "busy" state. As amended, claim 9 recites a radio link that is placed in a busy state for the duration of an algorithm's execution, whereby all other RRM algorithms are denied access to the radio link until the completion of the algorithm. As such, the disclosure of Mortensen does not anticipate the present invention.

The Applicants also respectfully disagree with the Examiner's assertion that the "set of predicted measurements for use by other RRM procedures" recited in the previously submitted claim 9 is anticipated by the multiple parameter sets disclosed in paragraphs 0031, 0034, and 0037 of Mortensen. Mortensen discloses in relevant

part that "more than two parameter sets can be utilized in order to allow a finer level of adaptation of the communication parameters utilized by the mobile phone to the actual network traffic conditions" (paragraph 0034). As stated above, when a RL is being acted upon by a RRM algorithm, the RL is transferred from an idle state to a busy state. This occurs without regard to parameter sets and is completely different from Mortensen's use of parameter sets.

The Examiner further states that "one skilled in the art would immediately envision that rejection (as described in Mortensen) is an inherent function of the process of placing the radio link into a busy state" (page 5 of the second Office Action); Applicants respectfully disagree. Mortensen teaches a response to congestion where all access to the signal is denied until the congestion clears, regardless of the type of access requested or the source of the congestion. It does this by switching the mobile phone from its original parameter set to an alternative or secondary parameter set. When the congestion is cleared, the mobile phone is returned to its initial parameter set (paragraph 0032). The present invention does not switch parameter sets. Consequently, the disclosure of Mortensen is not analogous to placing the RL into a busy state as disclosed by the present invention.

The Examiner cites paragraph 0002 of Mortensen as anticipating the RRM algorithms recited in claim 9. In Mortensen, the load (congestion) on a communication network is controlled by rejecting communication requests through

forbidding the mobile station to access the channel. The present invention does not forbid access to a congested channel. Rather, the present invention coordinates potentially conflicting RRM algorithms acting on the same RL at the same time. It does so by transferring the RL from an idle state to a busy state when an algorithm is performing on the RL. While in this busy state, no other RRM algorithms can act on the RL.

This is not, as the Examiner contends on page 5, lines 5-6 of the second Office Action, analogous to the rejection described in Mortensen. In contrast to Mortensen, the present invention does not reject all communication requests on a congested channel and it does not block the entire channel. The present invention's algorithm is performed regardless of the general traffic congestion on the RL and only affects the RL being performed on, thus leaving access to the rest of the timeslot open to other procedures. The amendment to claim 9 further clarifies the "busy" state of the present invention, whereby all other RRM algorithms are denied access to the radio for the duration of the algorithm's execution. Thus, claim 9 is specific to RRM algorithms. This is clearly distinguishable from Mortensen, where the general load is controlled by denying access to the channel that is too congested.

Paragraph 0024 of Mortensen states that "the RRM encompasses functions like dynamic challenge allocations, call admission control, scheduling of data services and other RRM mechanisms". This is not the same as the RRM algorithms

claimed in the present invention. The list of functions included in paragraph 0024 of Mortensen is a list of separate and distinct items, namely that "scheduling of data services" and "other RRM mechanisms" are two separate items, and not a combination of things that make up one item. This is significant because when read as a separate list of items, the functions listed in paragraph 0024 do not anticipate the RRM algorithms recited in the present invention.

In addition, Applicants respectfully disagree with the Examiner's assertion that the functions listed in paragraph 0024 anticipate the RRM algorithms of the present invention. Claim 9 of the present invention recites a method for scheduling RRM algorithms. In contrast, Mortensen discloses RRM procedures that are tasks or utilities.

The method taught in Mortensen for controlling congestion is not the same as the method taught in the present invention for coordinating RRM algorithms. Mortensen discloses changing an interleaving length in connection with relieving a congestion condition (paragraphs 0030 and 0033). This narrow focus is in contrast to the present invention, which permits any RRM procedures to be selected for execution upon receipt of an appropriate trigger. In contrast to Mortensen, the present invention resolves conflicts between RRM algorithms through coordination, not by increasing the interleaving length. Additionally, claim 9 has been amended to more specifically describe what is included in the previously claimed "RRM

procedures" by replacing the term "procedure" with the term "algorithm". Consequently, Mortensen does not anticipate claim 9 of the present invention.

With respect to the rejection of the claims 1-8 and 12-13 under 35 U.S.C. § 103(a) as being unpatentable over Mortensen in view of Lu, Applicants respectfully disagree in regard to Mortensen for the reasons set forth above. Additionally, the combination of Mortensen and Lu fails to adequately disclose the method of claim 1.

Claim 1 has been amended to more specifically point out and distinctly claim a method of scheduling RMM procedures on a radio link by coordinating RRM algorithms. The method of claim 1 analyzes the results of selected RRM algorithms to determine their results, chooses a subset of the selected RRM algorithms based upon their outcomes to determine an optimal set of results, executing the subset of selected RRM procedures and placing the radio link in a busy state for the duration of the algorithm's execution. In the third Office Action, the Examiner asserts that Lu discloses a method of managing RRM algorithms by defining algorithm priority levels and consequently performs an analysis of the situation.

Lu is primarily concerned with prioritizing algorithms, while the present invention describes a method of coordinating RRM algorithms. In Lu, a number of system algorithms are prioritized according to "predefined priority levels" (column 3, line 13). Priority parameters for algorithms within the same priority level are then defined (column 3, lines 15-16). If the problem the algorithms were to address

has not been solved after executing the algorithms according to their initial priority, then the same algorithms are assigned different priorities and run again (column 3, lines 26-29).

Lu describes a method and apparatus capable of automatically re-ordering algorithms when the desired result is not obtained (column 3, lines 11-29). There is no testing to determine why the previous algorithm order did not work, or whether the re-ordering the algorithms would result in a successful outcome. In other words, the disclosure of Lu performs no analysis of the situation and makes no predictions based on given information as to what algorithms would be most likely to achieve a successful result. This is in contrast to the currently amended method of claim 1 in which the RRM algorithms to be executed are chosen based upon their outcomes. Accordingly, it is respectfully submitted that claim 1 is not obvious over Mortensen in view of Lu.

Based on the foregoing remarks, the disclosure of Mortensen does not anticipate independent claim 9 and a combination of Mortensen and Lu does not lead one of ordinary skill in the art to the invention recited in independent claim 1. Therefore, the independent claims (i.e., claims 1 and 9) are distinguishable over the cited references. Because the independent claims are distinguishable over the cited references, the dependent claims (i.e., claims 2-8 and 10-14) are also distinguishable over the cited references without the need for additional comment.

It is respectfully submitted that the amendments and remarks made herein place pending claims 1-14 in condition for allowance. Accordingly, entry of this amendment as well as reconsideration and allowance of pending claims 1-14 are respectfully requested.

If the Examiner does not believe that the claims are in condition for allowance, the Examiner is respectfully requested to contact the undersigned at 215-568-6400.

Respectfully submitted,

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